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NATURE AND MAN IN YELLOWSTONE NATIONAL PARK

Yellowstone National Park is administered as a natural area. Such areas are to preserve natural environments and native biota as an integrated whole (i.e. ecosystem) and to provide for the public enjoyment of same in ways that maintain natural conditions. Natural conditions exist to the extent that man does not change things from what they would otherwise be. Obviously changes will occur from natural processes and these need to be distinguished from those due to man. Management in natural areas is restricted to protecting against, removing, or compensating for the activities of man that cause departures from natural conditions.

The retreat of glaciers about 30,000 years ago permitted vegetation and wild animals to occupy the region that became Yellowstone Park. Primitive man arrived about 10,000 years before present and subsisted in small numbers until about 100 years ago when the park was established. All other native species are still present. With the possible exception of the Rocky Mountain wolf, representative populations of all native wild animals are yearlong residents. Additional numbers of elk and mule deer use the park in summer and make annual migrations from and back to wintering areas in Wyoming, Montana, and Idaho.

The present effects of modern man on the park environment and its resident biota are diagrammed on Fig. 1. As shown, less than 1% of the park's 2.2 million acres is permanently altered as roads or facilities that presently accommodate over 2 million visitors each year. The disposal of effluents and wastes from existing facilities does not appear to be causing departures from natural conditions in the remainder of the park.

The remainder of the park represents an ecological system where natural conditions are to be maintained or restored. As indicated on Fig. 1, the extent to which man suppresses naturally-caused fires is causing this system to be different from what it would otherwise be. Departures from natural conditions are greatest in the park's grassland areas which burned on the average every 20-25 years, and least in forest habitats that burned every 100-200 years.

Other measurable departures from natural conditions occur from man's past and present exploitation of native fishes. Less easily corrected departures occur in some portions of the park from past introductions of exotic fishes and plants. Minor departures also persist from eras when native predators and herbivores were artificially controlled, but these are being erased with the passage of time.

Overall, Yellowstone National Park appears to be sufficiently large and ecologically intact to make the objective of preserving a natural ecosystem of mountain environments and native biota obtainable. The objective of providing for the public enjoyment of same in ways that maintain natural

conditions also seems feasible, but only with limits on the numbers of visitors and the kinds of activities that can be accommodated. Most present departures from natural conditions can be corrected by not interfering with natural processes, by the appropriate regulation of humans, or the passage of time. Obviously, the preservation of natural ecological systems requires a "let it be" philosophy. Human judgments of what is good or bad in such systems can only be appropriate within the context of what is or is not natural.

Man's effects on wild animals that are not yearlong residents of the park present some conflicts with the attempts to restore and maintain a natural ecosystem inside the park. A viable population of wolves may only be restored if this species is also adequately protected on certain adjoining state lands. Mountain lions and grizzly bears will also need to be protected on some adjacent lands to occur in natural densities within the border regions of the park. The hunting of elk and mule deer on adjacent lands does not cause serious conflicts, unless such activities restrict migrations from the park.

Recommended Reading

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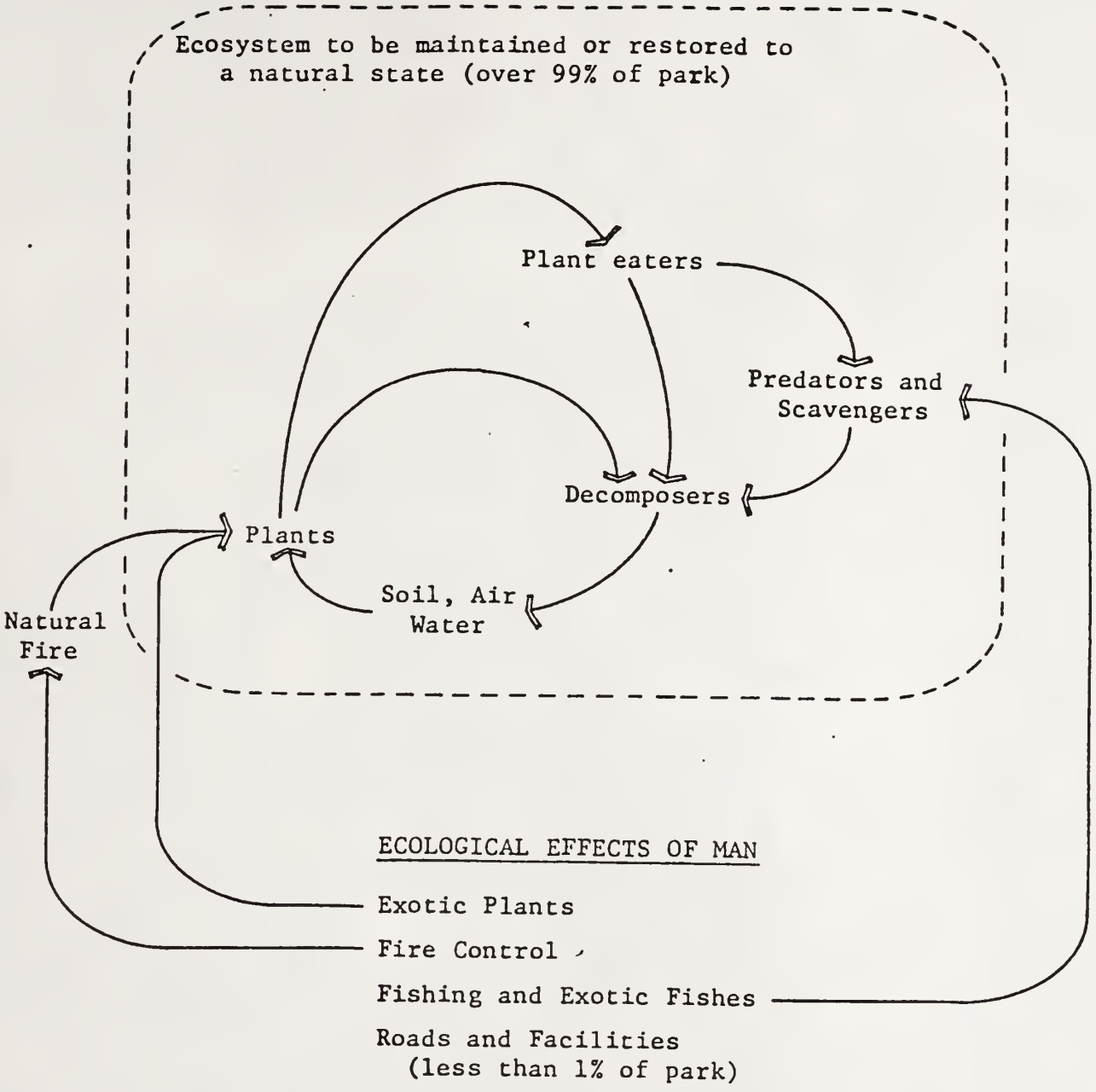

Figure 1. Present ecological effects of man on the cycling of nutrients in the park ecosystem.